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EXAMINER	
LIU, SUE XU	

ART UNIT	PAPER NUMBER
1639	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/522,037	NALIN ET AL.	
	Examiner	Art Unit	
	SUE LIU	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-47* is/are pending in the application.

4a) Of the above claim(s) *43-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-42 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Status

1. Claims 1-23 have been cancelled.

Claims 24-47 are currently pending.

Claims 43-46 have been withdrawn.

Claims 24-42 and 47 are being examined in this application.

Election/Restrictions

2. Applicant's election with traverse of Group I (claims 24-42 and 47) in the reply filed on 4/16/07 is as previously acknowledged.

3. This application contains claims 43-46 drawn to an invention nonelected with traverse in the reply filed on 4/16/07. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Priority

4. This application is filed under 35 U.S.C 371 of PCT/EP03/07765 (filed on 07/17/2003).

5. Receipt is as previously acknowledged of papers (EP 022918718; 7/24/02) submitted less than 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

6. Applicants amendment to the drawings (filed on 1/18/08) to delete figures containing only lists of sequences is acknowledged and entered.

Claim Objection(s) / Rejection(s) Withdrawn

7. In light of applicants' amendments to the claims, the objection over Claims 34 and 47 as set forth in the previous office action is withdrawn.

8. Upon further consideration and in light of applicant's argument regarding the publicly availability (i.e. GenBank Accession numbers) of the various listed plasmids (Reply, filed on 1/18/08; pp.9+) as recited in the instant claim 32, the following claim rejection is withdrawn:

Claim 32 is rejected under 35 U.S.C 112, first paragraph, as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

9. In light of applicants' amendments to the claims to clarify the claim language of the instant claims 28-33 and 35, the following claim rejection is withdrawn:

Claims 28-33 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

However, the claim rejection under 35 U.S.C. 112, second paragraph, over claims 37 and 38 is maintained. See the discussion below.

Claim Rejections - 35 USC § 112

Second paragraph of 35 U.S.C. 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A.) Claims 37 and 38 recite "wherein the transposable nucleic acid comprises, flanked by two inverted repeats, the target polynucleotide…" which is not clear and renders the claim indefinite. Claim 36 from which claim 37 depends on recite "the target polynucleotide construct comprises a transposable nucleic acid construct". However, Claim 37 seems to recite "the transposable nucleic acid comprises "…the target polynucleotide construct". Thus, one of ordinary skill in the art would not be able to determine with element(s) is/are comprised by the claimed "transposable nucleic acid".

Discussion and Answer to Argument

12. Applicant's arguments have been fully considered but they are not persuasive for the following reasons (in addition to reasons of record). Each point of applicant's traversal is addressed below (applicant's arguments are in italic):

Applicants argue the claim amendment overcomes the above rejection. However, the claim amendment does not overcome the rejection as discussed above. Applicants are respectfully directed to the above claim rejection for detailed discussion.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(Note: the instant claim numbers are in bold font.)

Rondon

14. Claims 24-29, 35, 39, 41, 42 and 47 are rejected under **35 U.S.C. 102(b)** as being anticipated by Rondon et al (Applied and Environmental Microbiology. Vol. 66(6): 2541-2547; 06/2000; cited in IDS) and as evidenced by Rondon et al (PNAS. Vol.96: 6451-6455; 1999; The citation of the Rondon (PNAS) reference is necessitated by applicant's amendment to the claims.) The previous rejection is maintained for the reasons of record as set forth in the previous Office action as well as the discussion below.

The instant claims recite a method of analyzing a library of polynucleotides, said polynucleotides being contained in cloning vectors having a particular host range, the method comprising (i) selecting cloning vectors in the library which contain a polynucleotide having a

particular characteristic, (ii) modifying said selected cloning vectors to allow a transfer and integration of said vectors and/or of the polynucleotide which they contain into a chromosome selected host cell, and (iii) analyzing the polynucleotides contained in said modified vectors upon transfer of said modified vectors into said selected host cell.

Rondon et al, throughout the publication, teach molecular cloning of DNA isolated from microbial samples using various cloning vectors (Abstract).

The reference teaches construction BAC (bacterial artificial chromosome) libraries made with DNA isolated directly from soil (e.g. p.2541, right col., para 2; p.2542, left col., para 1-2), which read on step (i) of **clm 42** as well as the unknown polynucleotides of **clms 25** and **26**, as well as the BAC vector of **clm 47**. The reference also teaches screening and analyzing the clones from the generated libraries (e.g. pp.2542-2543; especially bridging para) and selection of a certain construct such as the constructs that contain various genes (including cellulose, chitinase, keratinase, etc.) (e.g. p.2543), as well as "selecting" DNA with certain size from the generated libraries (e.g. p.2542, left col., para 3), which read on the "selecting step" of **clms 24** and **42**, as well as **clms 39** and **41**. The reference also teaches restriction digestion of the selected vectors, and then subsequent ligation and transformation of the selected DNA (e.g. p.2542, cols, 1-2), which reads on the "modifying", "transferring" and "cloning" steps of **clms 24**, **28** and **42**. The reference's teaching also reads on the limitation of **clm 29**, because the insertion of the various DNA are inserted into the vector not into "the polynucleotide".

The reference inherently teaches "integration… into a chromosome of a selected host cell" of step (ii) of **clm 24**. The reference teaches mutating BAC (i.e. chromosome) of host cells (e.g. p.2541, last para; p.2542, right col., para 5; pp.2452+) as described in a related publication,

Rondon et al (PNAS. Vol.96: 6451-6455; 1999), which the "integration" (or transposon mutagensis) procedure of Rondon (2000) is the carried out the same as the one in Rondon (1999). The Rondon (1999) publication teaches transforming BAC containing host cells (i.e. "chromosome" containing host cells) with plasmids (or DNA vectors) for transposon mutations (e.g. pp.6452-6453 of Rondon (1999)). Thus, by using the transposon mutagensis procedure, one of the host cell "chromosome" (i.e. the transformed BAC) is integrated with "the polynucleotide" from the inserted cloning vector.

The reference teaches using various *E. coli* cloning vectors (e.g. pp.2541-2542), which reads on the vectors of **clm 27**.

The reference also inherently teaches the cloning vectors to have at least a promoter region as recited in **clm 35**, because the cloned DNA fragments are successfully expressed (e.g. pp.2542-2543) indicating a promoter region for transcriptional gene expression activation.

Discussion and Answer to Argument

15. Applicant's arguments have been fully considered but they are not persuasive for the following reasons (in addition to reasons of record). Each point of applicant's traversal is addressed below (applicant's arguments are in italic):

Applicants argue the instant invention is "unlike the cited art" and reciting various characteristics and/or properties of the instant claimed invention (Reply, entered 1/18/08, pp.14+).

However, applicants have failed to point out the specific claimed elements/features that are supposedly not taught by the cited reference.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "maintenance of large foreign DNA"; "integration of polynucleotides of interest in the genome of a new host cell", etc.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants also argue the Rondon reference "fails to teach or suggest modification of cloning vectors of the library to allow transfer and integration of the vector and/or polynucleotide contained in this vector into a chromosome of a new selected host cell". (Reply, entered 2/13/08; p.8).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "*a chromosome of a new selected host cell*") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants also assert "a selected vector exhibiting the desired activity is not modified in order to be inserted in an other host cell" *[sic]*(Reply, entered 2/13/08; p.8). However, applicants also state "The only modifications performed on this vector are (i) a transposon insertion in order to inactivate the gene…"

By applicant's own statement, the Rondon reference teaches the step of "modifying said selected cloning vectors". In addition, the instant claim recites "a polynucleotide having a

particular characteristic", which recitation is broad and encompassing various "characteristics" including "polynucleotides" that can inactive a gene.

Applicants are respectfully directed to the above rejection for detailed discussion of how the reference teaches all elements of the claimed invention.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Rondon and Chain

17. Claims 24-32, 35, 39-42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rondon et al (Applied and Environmental Microbiology. Vol. 66(6): 2541-2547; 06/2000; cited in IDS), in view of Chain et al (Journal of Bacteriology. Vol.182: 5486-5494; 10/2000). The previous rejection is maintained for the reasons of record as set forth in the previous Office action as well as the discussion below.

Rondon et al, throughout the publication, teach molecular cloning of DNA isolated from microbial samples using various cloning vectors, as discussed supra.

Rondon et al do not explicitly teach the target polynucleotide construct comprises an "origin of transfer functional" as recited in **clms 30-32**, as well as the inherent function of

conjugative transfer as recited in **clm 40**. The abbreviation, RP4 recited in **clm 32** is construed as referring to the bacterial plasmid RP4.

However, Chain et al, throughout the publication, teach inserting oriT from RK2 (equivalent to RP4) into cloning vectors for site specific recombination of fragments of bacteria genomic DNA isolated from environment (such as soil) (e.g. Abstract; p.5484, Figures 1-2). The reference also inherently teaches "conjugative transfer" recited in **clm 40**, because "conjugative transfer" is an inherent property or a "natural DNA transfer mechanism" of constructs comprising "origin of transfer" (such as oriT from RP4) as evidenced by the instant specification (instant spec. p.14, lines 25+). In addition, the Chain reference also teaches the inherent property of conjugative transfer of the oriT element (Chain, p.5486, right col., para 2; p.5491, right col., para 1).

Therefore, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to insert "oriT" derived from RP4 or other plasmid into cloning vectors through the "natural DNA transfer mechanism".

A person of ordinary skill in the art would have been motivated at the time of the invention to insert oriT (or the origin of transfer) from RP4 plasmid in cloning or expression vectors, because utilization of these oriT DNA fragments offers the advantages of specific site direct insertion of large fragments from bacteria genome to host E. coli genome as taught by Chain et al (e.g. Abstract).

A person of ordinary skill in the art would have reasonable expectation of success of achieving such modifications since both Rondon et al and Chain et al have demonstrated manipulation of various cloning vectors for insertion of desired DNA fragments such as oriT,

nucleic acid fragment of interest, and host cell transformation as well as conjugative transfer are routine and known in the art.

Rondon, Chain, and Groth

18. Claims 24-35, 39-42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rondon et al (Applied and Environmental Microbiology. Vol. 66(6): 2541-2547; 06/2000; cited in IDS), and Chain et al (Journal of Bacteriology. Vol.182: 5486-5494; 10/2000) as applied to claims 24-32, 35, 39-42 and 47 above, and further in view of Groth et al (PNAS. Vol.97: 5995-6100; 2000).

Rondon et al, throughout the publication, teach molecular cloning of DNA isolated from microbial samples using various cloning vectors, as discussed supra.

Chain et al, throughout the publication, teach inserting oriT from RK2 (equivalent to RP4) into cloning vectors for site specific recombination of fragments of bacteria genomic DNA, as discussed supra.

The combination of Rondon et al and Chain et al does not explicitly teach the target polynucleotide construct comprises an "integrase" as recited in clms 33 and 34. The term, "integrase functional" recited in clm 33 is construed as referring to the enzyme "integrase" that is encoded by the target polynucleotide construct.

However, Groth et al, throughout the publication, teach inserting using phage C31 integrase to carry out recombination between DNA or interest and bacterial chromosome or human DNA (e.g. Abstract; pp.5995-5996).

Therefore, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to include nucleic acids encoding for the phage C31 integrase in

the cloning or expression vector for the purpose of integrating the desired DNA into the host cell genome.

A person of ordinary skill in the art would have been motivated at the time of the invention to include nucleic acids encoding for the phage C31 integrase in the cloning or expression vector for the purpose of integrating the desired DNA, because utilization of integrase offers the advantages of "precise unidirectional integration" with high efficiency as taught by Groth et al (e.g. Abstract).

A person of ordinary skill in the art would have reasonable expectation of success of achieving such modifications since Rondon et al, Chain et al and Groth et al have demonstrated manipulation of various cloning vectors for insertion of desired DNA fragments such as oriT, phage C31 integrase, nucleic acid fragment of interest, and host cell transformation as well as conjugative transfer are routine and known in the art and have shown to be successfully used for various molecular cloning processes.

Rondon, Chain, Groth, Berg and Devine

19. Claims 24-42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rondon et al (Applied and Environmental Microbiology. Vol. 66(6): 2541-2547; 06/2000; cited in IDS), Chain et al (Journal of Bacteriology. Vol.182: 5486-5494; 10/2000), and Groth et al (PNAS. Vol.97: 5995-6100; 2000) as applied to claims 24-35, 39-42 and 47 above, and further in view of Berg et al (PNAS. Vol.79: 2632-2635; 1982), and if necessary in view of Devine et al (US 5,728,551; 3/17/1998).

Rondon et al, throughout the publication, teach molecular cloning of DNA isolated from microbial samples using various cloning vectors, as discussed supra.

Chain et al, throughout the publication, teach inserting oriT from RK2 (equivalent to RP4) into cloning vectors for site specific recombination of fragments of bacteria genomic DNA, as discussed supra.

Groth et al, throughout the publication, teach inserting using phage C31 integrase to carry out recombination between DNA or interest and bacterial chromosome or human DNA, as discussed above.

The combination of Rondon et al, Chain et al and Groth et al does not explicitly teach the target polynucleotide construct comprises an "transposable nucleic acids", inverted repeats, and marker genes as well as using "transposase" for cloning vector modification as recited in clms 36-38.

However, Berg et al, throughout the publication, teach inserting using transposon elements for modifying DNA constructs (Abstract). The reference teaches the transposon DNA comprising inverted repeats, and marker gene such as Kan resistance gene (e.g. Figures 1-2). The reference also teaches using transposase for the DNA recombination process (e.g. p.2632, para 1; pp.2633-2634, bridging para). The reference also teaches inverse transposition where the Kan resistance gene is replaced by other drug resistance genes (e.g. Figure 2), which read on the method steps of replacing the first marker gene with the second marker gene as recited in clm 38. The reference also teaches the advantages of using transposons such as their ability to recombine DNA without needing extensive DNA homology (e.g. p.2632, para 1).

Devine et al, throughout the patent, teach using transposons (with transposase) to facilitate DNA recombinant events (Abstract). The reference also teaches the advantages of "in vitro" transposon reactions such as high efficiency and versatility of the method (e.g. col. 5, lines 45+).

Therefore, it would have been prima facie obvious for one of ordinary skill in the art at the time the invention was made to use transposon with transposase for desired DNA recombination such as insertion, deletion or mutation of DNA constructs in an in vitro or in vivo process.

A person of ordinary skill in the art would have been motivated at the time of the invention to use transposons with transposase for either in vivo or in vitro recombining DNA to generate desired DNA constructs, because utilization of transposons/transposase especially in an in vitro process offers the advantages of DNA recombination without requiring DNA homology as taught by Berg et al, and high efficiency in an in vitro process as taught by Devine et al discussed above.

A person of ordinary skill in the art would have reasonable expectation of success of achieving such modifications since Rondon et al, Chain et al, Groth et al, Berg et al and Devine have demonstrated manipulation of various cloning vectors for insertion of desired DNA fragments using various elements such as transposons are routine and known in the art and have shown to be successfully used for various molecular cloning processes.

Discussion and Answer to Argument

20. Applicant's arguments have been fully considered but they are not persuasive for the following reasons (in addition to reasons of record). Each point of applicant's traversal is addressed below (applicant's arguments are in italic):

All applicants' argument regarding the claim rejections under 35 USC 103(a) are answered and discussed below.

In general, applicants traversed the above rejections by attacking each reference alone (Reply, entered 1/18/08 and 2/13/08). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants seem to argue that the Chain reference by itself does not teach all elements of the instant claimed invention, and there is no "suggestion or motivation" to combine with the Chain reference. (Reply, entered 1/18/08; pp.17-18).

However, the above claim rejection under 35 USC 103(a) is not over the Chain reference alone. Applicants are also respectfully directed to the recent Supreme Court decision, which forecloses the argument that a specific teaching, suggestion, or motivation is required to support a finding of obviousness. *KSR, 127 S.Ct. at 1741, 82 USPQ2d at 1396.*

Applicants also made general statements regarding the other cited references including Groth and Berg, and generally arguing the instant invention would not be obvious over these references. (Reply, entered 1/18/08; pp.18-19).

Applicants have made the above assertion without providing any supporting evidence. Applicants are respectfully directed to the above rejection for detailed discussion on how the combination of the references renders the instant claimed invention obvious.

New Claim Objection(s) / Rejection(s)

Claim Rejections - 35 USC § 102

Haldimann

21. Claims 24, 27, 28, 33 and 35 are rejected under **35 U.S.C. 102(b)** as being anticipated by Haldimann et al (Journal of Bacteriology. Vol. 183(21): 6384-6393; 11/2001). This rejection is necessitated by applicant's amendments to the claims.

Haldimann et al, throughout the publication, teach molecular cloning of DNAs using various vectors into bacteria chromosomes (e.g. Abstract).

The reference teaches making vectors comprising libraries of various DNAs (genes or mutants of genes) (e.g. Abstract; p.6384; p.6391, right col.), which the various DNAs (or genes) read on "a library of polynucleotides" in cloning vectors of **clm 24**. The reference also teaches these cloning vectors allow transfer and integration of the genes into E. coli host cell chromosomes (e.g. p.6384; p.6389; Figure 4), which read on step (ii) of **clm 24**. The reference also teaches analyzing the integrated DNAs (e.g. pp.6389+), which reads on step (iii) of **clm 24**.

The cloning vectors of the reference (e.g. pp.6385+) read on the E. coli cloning vectors of **clm 27**.

The reference teaches various steps of constructing the plasmids including insertion (e.g. pp.6386+), which read on the targeted insertion of **clm 28.**

The reference also teaches the plasmids comprising phage integrases (e.g. p.6384, left col.), which read on the integrase of **clm 33**.

The reference also teaches the plasmids comprise various promoters (e.g. Abstract), which read on the promoters of **clm 35**.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Liu whose telephone number is 571-272-5539. The examiner can normally be reached on M-F 9am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Schultz can be reached at 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sue Liu/
Patent Examiner, AU 1639
5/12/08

/Jon D. Epperson/
Primary Examiner, AU 1639